Tran Trung Khang

Curriculum Vitae

Phu Nhuan district
Ho Chi Minh, Viet Nam
June 1, 2006
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EDUCATION

2021-2024 **VNUHCM - High School for the Gifted**, *Ho Chi Minh city, VN*
GPA: 10.0/10.0

2024–present **B.Sc. in Advanced Program in Computer Science**, *VNU-Ho Chi Minh city University of Science*

EXPERIENCE

- *Research Internship at ASIA LAB*, Ho Chi Minh city, VN
- *Attended VIASM-IPP Student research workshop of Institut Polytechnique de Paris and Vietnam Institute for Advanced in Mathematics*
- *Member of the math department of The Gifted Battlefield project*
- *Attended the 2024 Vietnam Summer School of Science (VSSS)* of Vietnam Institute for Advanced in Mathematics
- *Attended the 2024 Math and Science Summer School (MASSP)* of Vietnam Institute for Advanced in Mathematics
- *Attended the 2024 Individual Research Program* of Lumiere Education
- *Cybersecurity Internship* at E-CQ
- *Examiner of the 2024 Iranian Geometry Olympiad (IGO)*
- *Instructor of the 2024 Eastern School in Mathematics*

HONORS & AWARDS

- **First prize in the Vietnam National Math Olympiad in 2024**
  Rank 7^{th} overall
- **Third prize in the Vietnam National Math Olympiad in 2023**
- **First prize in the Vietnam math summer school contest in 2022 .**
  Rank 8^{th} overall
- **First prize in the Vietnam math summer school contest in 2023.**
  Rank 1^{st} overall
- **First prize in the 30/4 math olympiad in 2023 .**
  Rank 7^{th} overall
- **First prize in the Ho Chi Minh city math olympiad in 2024 .**
- **Odon Vallet Scholarship in 2023, 2024**

RESEARCH PROJECTS

Submission-process **Sparse Partial Optimal Transport via Quadratic Regularization**
-*First author*
-*In submission to* International Journal of Advanced Computer Science and Applications (IJACSA)
-*Main contributions:* Set up and run most of the experiments, write the main sections of the paper

Submission-process **Improved tail Bounds for sums of geometric and binomial variables generated from special families of parameters**

-*First author*

-*In submission to* the Annals of Probability

-*Main contributions:* Derive the main theorems and lemmas, write most parts of the paper, generalize the problem for different settings, main experiments coding

Submission-process **ConvexHull: An approach for Kidney Pathology Segmentation**

-*Co-first author*

-*In submission to* the 17th Asian Conference on Intelligent Information and Database Systems (ACIIDS)

-*Main contributions:* Derive the novel Convex Hull post-processing for the data set of Kidney Pathology Images, write most parts of the paper

Ongoing **Minorization-Maximization Algorithm approach for Gaussian Mixture of Experts**

-*Aiming to submit at* IEEE Transactions on Signal Processing

-*Main contributions:* Derive an MM-Algorithm for the Gaussian Mixture of Expert problem, prove that lemma2 from the paper "Multinomial logistic regression algorithm" is incorrect and derive a correct version, support with the coding of experiments

Ongoing **Demystifying Online Minorization-Maximization Algorithm in Gaussian Mixture of Experts**

-*Aiming to submit at* Journal of the Royal Statistical Society Series B

-*Main contributions:* Derive an online MM-Algorithm for the Gaussian Mixture of Expert problem, main experiments coding

SKILLS

- **Programming**
  C/C++, Python, HTML, CSS, LaTeX
- **Computer Science Background**
  Machine Learning, Deep Learning, Mathematics, Computer Vision
- **Language**
  English (7.5 IELTS), Vietnamese (native speaker)
- **Research Interests**
  Applied Mathematics, Theoretical Artificial Intelligence